SUPREME COURT, U. S.
FILED
DEC 27 1976
MICHAEL RODAK, JR., CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, 1976

Nos. 76-419 & 76-548

VERMONT YANKEE NUCLEAR POWER CORPORATION,
Petitioner

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., NEW ENGLAND COALITION ON NUCLEAR POLLUTION, and CONSOLIDATED NATIONAL INTERVENORS, INC.,
Respondents

BALTIMORE GAS & ELECTRIC COMPANY, et al.,
Petitioners

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC. and CONSOLIDATED NATIONAL INTERVENORS, INC.,
Respondents

COMBINED APPENDIX TO BRIEFS IN OPPOSITION TO PETITIONS FOR WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

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UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

IN THE MATTER OF: URANIUM FUEL CYCLE	Docket No. RM-50-3

New Executive Office Building
Room G2008
17th & H Streets
Washington, D.C.

Thursday, 1 February 1973

The above-entitled matter came on for hearing pursuant to notice, at 10 a.m.

BEFORE:

M. D. PAGLIN, ESQ., Chairman.
DR. JOHN C. GEYER, Member.
DR. M. J. STEINDLER, Member.

APPEARANCES:

(As heretofore noted.)

ADDITIONAL APPEARANCES:

ARVIN E. UPTON, ESQ. and JAMES P. MCGRANERY, JR., ESQ., Lebauf, [*sic*] Lamb, Leeby [*sic*] & MacRae, 1821 Jefferson Place, N.W., Washington, D.C., on behalf of Alabama Power Company, et al.

AFTERNOON SESSION

2:00 P.M.

CHAIRMAN PAGLIN: Will the proceeding come to order? The Board has determined and with the kind

cooperation of Mr. Roisman, in order to accommodate Dr. Pittman, we would like to put some Board questioning to Dr. Pittman at this stage and then we will recommence with Mr. Roisman's group.

So the Board Members have questions of Dr. Pittman at this time. Dr. Steindler?

DR. STEINDLER: There has been some discussion and you alluded to it in your testimony regarding our present ability, the present ability of the nuclear industry to retain high level wastes in a safe fashion. Is there anything that your studies have shown that indicates that at this point, as apparently practiced in the industry, the retention of high level wastes is a real problem?

DR. PITTMAN: There is nothing that I can see with regard to the commercial high level wastes, either from the point of view of what the industry will have to do under the regulatory scheme, or what the AEC will have to do, once the solidified waste is delivered to them, to us.

The possible retention for up to five years in stainless steel tanks, as an acid solution is the type of thing we have had at Idaho Falls for of the order of ten years, and the type of thing we have been doing in stainless steel tanks at Idaho Falls for ten years, retention in acid solutions with no problems at all.

The next step the industry has to carry out is if they decide to wait five years and retain it as acid solution, to solidify the material, there are several methods of solidification, the method that was chosen by the first company who is going into business this year is that of using the fluid bed calcination technique, which again is one that has been demonstrated at Idaho Falls for ten years, and they then put that into cannisters and store it in basins of water.

All of this is under the license control of the regulatory group. The basin storage is similar to the type of

storage that is used at reactors for storing spent fuel elements that have essentially the same fission product contents, they have a lot more, has more plutonium than uranium, so it has a problem of material that we don't have in the wastes.

The sealing by ten feet steel cannisters is certainly no breakthrough in technology, it is something that can be done and has been done in many industries for a long period of time. The transportation of the spent wastes in the casks of the same type that have been used to transport spent fuel in my opinion is a demonstrated technology.

And the engineered surface storage of these wastes once delivered to the Commission is purely an engineering application of technologies that have been known for many years and that have been used by the Commission in not waste storage, because in our previous systems we used other methods, but in my opinion there is no technology that needs to be developed in order for the whole storage of wastes from the time it is generated and it is kept in manageable sized containers, from that point on, to the time we get it and store it in the engineered storage in managably sized retrievable, monitorable, maintainable containers.

The engineered storage, you have heard the words, we have designed for one hundred years, that is purely meant to show that the basic basins, the facilities in which these materials will be received and stored, are built with the latest technology for concrete and steel, and will certainly last a hundred years, probably a lot longer with adequate maintenance of the facilities.

We do not necessarily expect a given cannister delivered to us in 1983 to not have some corrosion problems in one hundred years. They can quite easily be overcanned or recanned or maintained and we have techniques built into the engineered storage facility that will allow us to detect when there is a leak before it

becomes a major leak, and to identify which tank is leaking, to take it out and repair it or repackage it.

DR. STEINDLER: Then the picture that I think I am beginning to see here is that at the moment it appears that the high level wastes are retainable in the individual reprocessing facilities, and that the engineered storage area will consolidate the waste surveillance and handling problem into one site and that is really its major contribution, not the development of some new technology.

DR. PITTMAN: There is nothing new being developed in the engineered storage facility. We are looking at better techniques of removing the heat, more efficient techniques of removing the heat than maybe used before. But it is purely an engineering application of known technology we are using.

And the idea of bringing these together at one site under the auspices of one agency, namely the Atomic Energy Commission, has to do more with the assurance of continued control for whatever period of time is necessary.

DR. STEINDLER: Thank you.

CHAIRMAN PAGLIN: Dr. Geyer?

DR. GEYER: Dr. Pittman, I refer to Table H-1 on page H-3 of the Survey Report.

DR. PITTMAN: Yes, sir.

DR. GEYER: There appears there numbers of shipments per model LWR annual fuel requirement. The question is will these remain constant with time over the years?

DR. PITTMAN: Per annual fuel requirement as it is now known, they will remain constant for the waste.

There are several factors which might make it fewer shipments, because we are assuming that the waste material in the can, has a very low density, and we can only get the equivalents of 3 tons of fuel reprocessed, the waste from three tons, into a can.

We have under development methods of solidification which might cut that down by a factor of 3 or more in the amount of wastes that you can get into a can. If it makes any sense. We feel that the packaging and shipping and storage of the low density material that is being produced by the first reprocessors going into business is perfectly safe, but there may be some economics in being able to get more of this material into a given can, which would cut down on the number of shipments, per year, per reactor.

DR. GEYER: I assume then that one could make an estimate of the number of model LWR's or the equivalents of them that would be present 30 years from now, and that would be the number of, multiplied by one, would be the number of shipments of high level wastes?

DR. PITTMAN: I don't have the figures in my head for the number of shipments we are assuming will have to take place per year from the economy and, the nuclear economy in the year 2000. I do remember a figure, I will be glad to submit a corrected figure for the record, but I do remember a figure that in the year 2000 there will be 8,000 cans delivered during that year, if I remember the figure correctly. In other words, the slope is going up very rapidly towards the end of the century.

DR. GEYER: But it would be desirable to have in the record some of the long term estimates, just to see what the scope of this problem may be in the future.

DR. PITTMAN: This would be for the entire economy?

DR. GEYER: That is right.

DR. PITTMAN: We have the figures. I can get them for the record.

DR. GEYER: It would be nice to have them for say 25 and 50 years, just to see what they might look like.

DR. PITTMAN: Yes, what we are assuming is this one facility we build will handle everything generated

through its end of the century. And then there would have to be more facilities, maybe expansion of this one, maybe new facilities or maybe other techniques would be used by that time.

DR. GEYER: My next question bears on the same problem in a sense. There will certainly be a considerable amount of this material in transit and since the cell storage under water of the high level waste is apparently being considered to be an interim measure, to be subsequently replaced by permanent resolution of the storage problem, why not leave the wastes where they are?

DR. PITTMAN: This is one of the things that is being given consideration, not so much from the standpoint of leaving them where they are in the basins of the reprocessor, but rather in the selection of sites.

One of the factors we are looking at in the selection of sites is does it make sense for us to have several government owned and operated repositories, right adjacent to or near the location of the reprocessing plants, so the initial shipment of this waste while it is at its hotest, namely after ten years, would be minimized?

DR. GEYER: Why not right on the site?

DR. PITTMAN: It is possible right on the site, under government control. We are still assuming government control is necessary. This is being looked at and evaluated against a single repository. The early indications seem to give the economics in favor of one single repository versus a series of small ones, but that is only economics.

DR. GEYER: Thank you, sir. That is all.

CHAIRMAN PAGLIN: Thank you very much, Dr. Pittman.

DR. PITTMAN: Thank you, sir.

National Environmental Policy Act § 102

5 U.S.C. § 4332

§ 4332. Cooperation of agencies; reports; availability of information; recommendations; international and national coordination of efforts

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by subchapter II of this chapter, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of Title 5, and shall accompany the proposal through the existing agency review processes;

(D) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(E) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(F) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(G) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(H) assist the Council on Environmental Quality established by subchapter II of this chapter.

Administrative Procedure Act § 10(e)

5 U.S.C. § 706

§ 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall—

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be—

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.